What is claimed is:

1. A method of X-ray inspection, wherein a section of a sample is photographed using X-rays to be inspected, comprising:

arranging an X-ray source to apply X-rays and an X-ray detecting means to detect X-rays facing each other with the sample between;

making an X-ray incidence plane in the X-ray detecting means parallel to the section, and swinging the X-ray detecting means about a straight line on the same plane with the section as the central axis with the parallel relationship between the X-ray incidence plane and the section maintained;

applying X-rays to the sample from the X-ray source, while the X-ray source is rotated about the straight line on the same plane with the section as the axis of rotation in synchronization with the X-ray detecting means, on the other hand; and

detecting X-rays passing through the sample in the X-ray detecting means.

2. A method of X-ray inspection according to Claim 1, wherein a section to be a subject is any section vertical to a stage on which the sample is placed.

3. A method of X-ray inspection according to Claim 1, wherein a section to be a subject is any section out of the vertical to a stage on which the sample is placed.

4. A method of X-ray inspection according to Claim 1 ~~or 2,~~ wherein the straight line to be the central axis and the axis of rotation is set to be vertical to a stage on which the sample is placed.

5. An X-ray inspection apparatus, wherein an X-ray source to apply X-rays and an X-ray detecting means to detect X-rays are arranged so as to face each other with a sample between, and X-rays emitted from the X-ray source and passing

through the sample are detected in the X-ray detecting means, comprising:

an X-ray incidence plane in the X-ray detecting means being arranged so as to be parallel to a prescribed straight line;

a swinging means to swing the X-ray detecting means about the straight line as the central axis, as the X-ray incidence plane is kept facing in the same direction all the time; and

a first rotating means to rotate the X-ray source about the straight line as the axis of rotation in synchronization with the X-ray detecting means.

6. An X-ray inspection apparatus according to Claim 5, wherein:

a section of the sample on the same ~~plane~~ with a plane including the straight line and having a parallel relationship with the X-ray incidence plane is a subject; and

the section is vertical to a stage on which the sample is placed.

7. An X-ray inspection apparatus ~~according to Claim~~ 5, wherein:

a section of the sample on the same plane with a plane including the straight line and having a parallel relationship with the X-ray incidence plane is a subject; and

the section is out of the vertical to a stage on which the sample is placed.

A 8. An X-ray inspection apparatus according to Claim 5 ~~or 6~~, wherein the straight line to be the central axis and the axis of rotation is set to be vertical to a stage on which the sample is placed.

Claims

A 9. An X-ray inspection apparatus according to ~~one of Claims 5-8,~~ comprising a sliding mechanism whereby the X-ray detecting means is slided in a direction vertical to the X-ray incidence plane.

Claim 5

A 10. An X-ray inspection apparatus according to ~~one of Claims 5-9~~, comprising

a stage transfer means for two-dimensionally transferring a stage on which the sample is placed.

11. An X-ray inspection apparatus, wherein an X-ray source to apply X-rays and an X-ray detecting means to detect X-rays are arranged, and X-rays emitted from the X-ray source and passing through a sample are detected in the X-ray detecting means, comprising:

a second rotating means to rotate the X-ray source about a prescribed straight line as the axis of rotation;

a plurality of the X-ray detecting means being arranged; and

each of X-ray incidence planes in the X-ray detecting means being arranged in such a position so as to be able to form a uniform geometric relationship with the rotating X-ray source on the basis of a prescribed plane including the straight line.